	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Updated 7/03
	Subsection: Giardiasis	Page 2 of 11

Giardiasis

Overview^(1,2)

For a more complete description of giardiasis, refer to the following texts:

- Control of Communicable Diseases Manual (CCDM).
- Red Book, Report of the Committee on Infectious Diseases.

Case Definition⁽³⁾

Clinical description

An illness caused by the protozoan *Giardia lamblia* and characterized by diarrhea, abdominal cramps, bloating, weight loss, or malabsorption. Infected persons may be asymptomatic.

Laboratory criteria for diagnosis

- Demonstration of *G. lamblia* cysts in stool, or
- Demonstration of *G. lamblia* trophozoites in stool, duodenal fluid, or small-bowel biopsy, or
- Demonstration of *G. lamblia* antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay)

Case classification

Confirmed: a case that is laboratory confirmed

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case

Information Needed for Investigation

Verify the diagnosis. What laboratory tests were conducted and what were the results?

When investigating gastrointestinal illness of unknown etiology, see the Outbreaks of Acute Gastroenteritis Section.


Establish the extent of illness. Determine if household or other close contacts are, or have been ill, by contacting the health care provider, patient or family member.

Contact the Regional Communicable Disease Coordinator if an outbreak is suspected, or if cases are in high-risk settings or jobs such as food handlers, child care, or health care.

Contact the Bureau of Child Care if the case is associated with a child care center.

Case/Contact Follow Up And Control Measures

Determine the source of infection to prevent other cases:

	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Updated 7/03
	Subsection: Giardiasis	Page 3 of 11

- Does the case or a member of the case's household attend a child care center or nursery school?
- Has the case ingested untreated water from a lake or stream?
- Has the case traveled out of the country to an endemic area?
- Does the case have contact with excreta from wild or domestic animals?
- Have there been other cases linked by time, place or person?
- Does the case engage in sexual practices that might place them or others at increased risk?

Control Measures


See the Giardiasis section of the Control of Communicable Diseases Manual (CCDM), “Control of patient, contacts and the immediate environment”.

See the Giardiasis section of the Red Book.

General:

Identify symptomatic contacts and obtain stool specimens. If the first stool specimen is negative by microscopic examination for ova and parasites (O&P), examine two additional specimens collected 24 hours apart.⁽⁴⁾ If the initial specimen is negative by EIA antigen testing of the stool, no additional specimens are needed for testing of *Giardia lamblia*.⁽⁵⁾ Positive contacts should be interviewed and referred for medical assessment.

- High-risk settings or jobs.
 - Food handlers, child care providers, and health care providers should be treated, excluded until diarrhea ceases and may return to work when approved to by either the local health department or the Missouri Department of Health and Senior Services. Counsel person upon returning to work regarding good hand washing. Treatment of symptomatic person(s) with appropriate antibiotic medication relieves symptoms and usually makes the person non-infectious.
- Outbreaks
 1. Food handlers and health care workers associated with an outbreak should be treated and may return to work when 3 successive fecal samples are negative for *Giardia lamblia*. Specimens should be collected at least 24 hours apart, but no sooner than 2 weeks after completion of treatment.⁽⁶⁾
 2. Child care workers should be treated, excluded until diarrhea ceases and may return to work when approved to by either the local health department or the Missouri Department of Health and Senior Services.
- Upon identification of an acute case in child care, the facility should be provided with the “Sample Letter To Parents Of Children Exposed to Giardiasis” for notification.

	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Updated 7/03
	Subsection: Giardiasis	Page 4 of 11

- All rules and guidelines regarding hand washing, toileting, diapering, and food handling, referenced in Licensing Rules for Group Day Care Homes and Child Day Care Centers ⁽⁷⁾ should be followed rigorously.
- Contact the Bureau of Child Care for the Environmental Public Health Specialist to perform an assessment of the child care facility.
- If cases are associated with a public water supply, notify the Regional Communicable Disease Coordinator, who will notify the Department of Natural Resources (DNR). If possible, DNR should be contacted before the collection of any public water samples.
- If coliform bacteria are detected in a private water supply (e.g. cistern, well), advise the family to boil the water (bring water to a full rolling boil for one minute) used for drinking, food preparation, dishwashing, and tooth brushing until the problem in the water supply can be corrected.
- If fresh fruits or vegetables are suspected as the vehicle in an outbreak, trace back of the product may prevent additional cases.

Laboratory Procedures

Specimens:

Microscopic Examination for Ova and Parasites:


1. Use an ova and parasite (O&P) kit, which contains two different preservatives, polyvinyl alcohol (PVA) and formalin to collect specimens. Specimens must be placed in both preservatives. Specimens may be shipped at room temperature. The Missouri State Public Health Laboratory (SPHL) performs this test. Specifically request testing for *Giardia lamblia* on the specimen submission form. Initial specimens should also be screened for *Cryptosporidium parvum*. The same specimen can be used for both tests.
2. If a large number of samples will be submitted (+15), or if sampling will continue over a long period, contact the Regional Communicable Disease Coordinator so arrangements may be made with the laboratory.

EIA Antigen Testing:

The SPHL does not routinely perform EIA testing of stool specimens for *Giardia lamblia*. However, many commercial laboratories do. Generally, the specimens can be fresh unpreserved stool, rectal swabs in culturettes or stool collected in formalin. Consult with the testing laboratory before specimen collection.

Enteric Cultures:

When investigating diarrheal illness of unknown etiology specimens should be initially screened for *Salmonella*, *Shigella*, *Campylobacter* and *E. coli O157:H7*. Collect specimens in Cary Blair media using the enteric specimen collection kit supplied by the SPHL. Specimens should be shipped refrigerated.

	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Updated 7/03
	Subsection: Giardiasis	Page 5 of 11

Environmental Samples:

Water supplies will not be tested for *Giardia lamblia* without substantial and convincing epidemiological evidence. If the water supply is suspected as the source of infection, it can be screened for coliform bacteria, which is a general indicator of the safety of the water.


Reporting Requirements

Giardiasis is a Category II disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services (DHSS) within 3 days of suspected diagnosis.

1. For confirmed and probable cases, complete a "Disease Case Report" (CD-1), and a "Record of Investigation of Enteric Infection" (CD-2C) revised 6/02.
2. Entry of the completed CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
3. Send the completed secondary investigation form(s) to the Regional Health Office.
4. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

References

1. Chin, James, ed. "Giardiasis (*Giardia enteritis*)."
Control of Communicable Diseases Manual, 17th ed. Washington, DC: American Public Health Association, 2000: 220-222.
2. American Academy of Pediatrics. "*Giardia lamblia* Infections (Giardiasis)." In: Pickering, LK, ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL. 2000: 252-253.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997;46 (No. RR-10): 48.
4. Evaluation of nine immunoassay kits (enzyme immunoassay and direct fluorescence) for detection of *Giardia lamblia* and *Cryptosporidium parvum* in human fecal specimens: Garcia LS; Shimizu RY; J Clin Microbiol. 1997 Jun; 35(6):1526-9.
5. NCCLS Document M28-P, 1993: Procedures for the recovery and identification of parasites from the intestinal tract; proposed guidelines. National Committee for Clinical Lab. Standards, Villanova, PA.
6. American Society for Microbiology. Diagnostic Medical Parasitology 3rd ed. Washington, DC. 1997: 570.
7. Missouri Department of Health and Senior Services. 19 CSR 30-62-Health. Chapter 62-Licensing Rules for Group Day Care Homes and Child Day Care Centers.

	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Updated 7/03
	Subsection: Giardiasis	Page 6 of 11

Other Sources of Information

1. Hill, David R. “*Giardia lamblia*.” Principles and Practice of Infectious Diseases. 5th ed. Eds. Gerald L. Mandell, John E. Bennett, and Raphael Dolin. New York: Churchill Livingstone, 2000: 2888-2894.
2. Donowitz, Infection Control in the Child Care Center and Preschool, 4th Edition, 1999: pages 140-144.